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EXAMINER

REKSTAD, ERICK J

ART UNIT

PAPER NUMBER

2613

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5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/707,044

Applicant(s)

LINCOLN ET AL.

Examiner

Erick Rekstad

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11, 14-38, 40 and 43-45 is/are pending in the application.
- 4a) Of the above claim(s) 16-24 and 29-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 14, 15, 25-28, 32-38, 40 and 43-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a final action in response to the amendment filed March 29, 2004 for application no. 09/707044 filed on November 6, 2000.

The Applicants affirmation of the election without traverse made by Kin-Wah Tong on December 12, 2003 to prosecute the invention of Group 1, embodied in claims 1-15, 25-28 and 32-45 has been noted. Accordingly, claims 16-24 and 29-31 have been withdrawn.

The cancellation of claims 10, 12, 13, 39, 41 and 42 has been noted. Claim 43 is stated as being cancelled with out prejudice on page 9 second to last paragraph but remains as a currently amended claim.

In the previous Office Action the rejection of claim 28 was neglected to be included. As claim 28 is dependent on the independent claim 25 the claim was rejected under 35 U.S.C 103(a) as being unpatentable over Chaddha in view of Burt. Further the claim was mistyped as claim 25 in the 35 U.S.C 103(a) rejection of claims 3 and 25 as being unpatentable over Chaddha in view of Wine. The claim is therefore rejected under 35 U.S.C 103(a) as being unpatentable over Chaddha, Burt and Wine.

Response to Amendment

The amendments to claims 1-3, 5, 6, 11, 14, 15, 32-34, 36, 37, 40, and 43-45 render Applicants remarks relative to claims 1-9, 11, 14, 15, 32-38, and 43-45 moot in view of the new ground of rejection.

In regards to claims 25-28 the Applicants argue that Chaddha, Burt and Wine do not teach the separating a video image sequence into two or more components and

then encoding each component of the video image sequence in accordance with selected dimensions to form one or more bitstreams. The Applicants attempt to add the requirements of the intended invention into the claims by stating a required plurality of dimensions. Claim 25 states "selecting a number of dimensions" not a plurality of dimensions, therefore Chaddha's use of resolution satisfies this requirement. Further, as stated in the previous office action Chaddha does not teach the separating of a video image sequence into two or more components. Burt was used as an additional reference to teach a method of dividing an image into components as stated in the previous office action (Abstract of Burt). Additionally as previously referenced Col 7 Lines 8-34 and Col 7 Line 50-Col 8 Line 21 describe a method of performing the division for obtaining foreground, background and moving objects. The Applicants further argue there is no motivation for the combination of Chaddha and Burt. The previous Office Action states the motivation of the system of Chaddha being used for linking the pre-processor (Burt 110, Fig. 1) to the multi-resolution pyramid (Burt 112, Fig. 1). Additionally the system of Chaddha could be used as the link between the output utilization means (Burt 120, Fig 1) and the display monitor (Burt 122, Fig. 1) as a means to provide the video to remote locations (Burt Col 16 Lines 40-46). Therefore the rejection of claims 25-27 stand rejected under 35 U.S.C 103(a) as being unpatentable over Chaddha in view of Burt.

In regards to Applicants arguments related to claim 28. As stated above Chaddha and Burt satisfy the requirements of claim 25. The Applicants state there is no motivation to combine Wine and Chaddha. Chaddha teaches a method of providing a

bitstream containing layers of video resolution where a decoder can decode the image at different resolutions (Col 3 Lines 23-56). Wine teaches a method of dividing the image into regions of importance and providing enhancement and/or degradation to the region (Col 2 Lines 13-41). The enhancement/degradation can be quantization level, resolution, color depth, and motion vector accuracy (Col 3 Lines 53-67). Therefore both systems adjust the resolution and Wine teaches further ways to adjust the image. It would therefore be obvious to one of ordinary skill in the art at the time of the invention to combine the method of Wine with the method of Chaddha in order to provide further layers in the bitstream to the decoders.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-7, 11, 14, 15, 32-38, 40 and 43-45 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,233,356 to Haskell et al.

[claims 1, 3, 32 and 34]

Haskell teaches the separating a video image sequence into two or more components (Col 1 Lines 51-67, Figs. 1(a)-1(d)). Haskell further teaches selecting a plurality of dimensions, where each dimension represents a characteristic of the video image sequence and encoding each component of the video image sequence in accordance with the selected dimensions to form one or more bitstreams (Col 5 Line 40-Col 6 Line 31, Figs. 2, 5, and 6). The citation shows an example of dimensions comprised of frame rate and an example of dimensions comprised of resolution as required by claim 3.

Haskell teaches the use of program instructions to perform the encoding on a microprocessor (Col 4 Lines 13-16, Col 11 and Col 12, Fig. 3). Haskell further teaches the connection of the encoder to a network, a specific example being a computer network (Col 4 Lines 3-6). Therefore the microprocessor is a node on the network as required by claim 32.

[claims 2, 4, 33, 35, and 43]

Haskell teaches the encoding step comprising the forming of a base bitstream representing a first video image sequence having a first set of characteristics; and forming at least one additional bitstream, where each additional bitstream represents a different dimension and wherein when said base bitstream and said at least one additional bitstream are combined to form a combined bitstream, the combined

bitstream represents a reconstructed video image sequence having different characteristics than said first video image sequence (Col 2 Lines 35-47, Col 5 Lines 40-67, Fig. 5). As the citation shows the video is divided into layers where in the layers can be combined for use by decoders of varying processing power. Therefore the video can be combined at different points producing a valid combination as required by claim 4.

Further as shown in Figures 5 and 6, the additional bitstreams (layers) represents a dimension (frame rate in Fig. 5, resolution in Fig. 6) of the video image sequence as required in claim 43.

[claims 5, 11, 36 and 40]

As shown in Figure 2 and 3, Haskell teaches the objects being encoded as additional bitstreams (Col 3 Lines 57-67 and Col 4 Lines 27-43). Haskell further shows in Figure 2 and Figure 4, that each object contains a base bitstream and at least one additional bitstream (Col 5 Lines 1-39).

[claims 6 and 37]

Haskell teaches dividing the image into objects and encoding the objects individually (Col 4 Lines 20-36, Fig. 3). Further as shown in Figures 1(a)-(d) the image is divided into orthogonal components.

[claims 7 and 38]

Haskell teaches the connection of the encoder to a decoder through a communication line (300, Fig. 3). Haskell further teaches the communication line may be represented by a data communication channel provided by the internet, a computer

network, a wireless data network or a telecommunication network (Col 4 Lines 3-6).

Therefore the encoder is located at the edge of a network.

[claims 14, 15, 44 and 45]

As stated above for claim 11, Haskell teaches each object contains a base bitstream and at least one additional bitstream. Haskell further teaches the base bitstream contains sufficient information to represent the object at a first level of image quality and the additional bitstreams contain supplementary data that if decoded improve the image quality of the base bitstream (Col 3 Lines 18-31).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haskell as applied to claim 7 in view of US Patent 5,621,660 to Chaddha et al.

[claims 8 and 9]

Haskell teaches the connection of the encoder to a network as shown above for claim 7, a specific example being the internet (Col 4 Lines 3-6). As shown in Figure 3, the encoder is separated from the decoder by the network. Haskell does not specifically teach the method performed at an intermediate node within a network. Chaddha teaches a similar system where in the encoder (60) and decoder (40) are separated by a network (Fig. 1). Chaddha further teaches the server receiving the video from a video

source (10 of Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention that server of Chaddha (20 Fig. 1) is also an intermediate node in the network of Figure 1. It would have been obvious to one of ordinary skill in the art to use the system of Chaddha (Fig. 1) to implement the network of Haskell (300, Fig. 3) in order to connect the encoder and decoder to a network such as the internet.

Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaddha in view of US Patent 5,063,603 to Burt.

[claims 25 and 27]

Chaddha teaches a software based method of deconstructing video, as shown in figure 2, comprising: selecting plurality of dimensions, where each dimension represents a characteristic of a video image sequence; and encoding each selected dimension to form one or more bitstreams. The encoding step comprises: forming a base bitstream representing a first video image sequence having a first set of characteristics; and forming at least one additional bitstream, where each bitstream represents a different dimension and when said first bitstream and said at least one additional bitstream are combined to form a combined bitstream, the combined bit stream represents a reconstructed video image sequence having different characteristics than said first video image (Col 3 Lines 11-55, Figs. 1, 2 and 3). Chaddha does not teach the deconstructing of a video into components. Burt teaches the method of dividing a video into foreground, background and moving objects. Burt further teaches sending the objects to a multi-resolution pyramid processor (Col 7 Lines 8-34 and 50-67, Col 8 Lines 1-21, Figs 1 and 3). It would be obvious to one skilled in the art at the time of the

invention to combine the video distribution system of Chaddha with the object detector of Burt, by sending the output of the preprocessor of Burt (Fig. 3) to the input of the video distribution system, in order to distribute the objects of the video through a network. Additionally the system of Chaddha could be used as the link between the output utilization means (Burt 120, Fig 1) and the display monitor (Burt 122, Fig. 1) as a means to provide the video to remote locations (Burt Col 16 Lines 40-46).

[claim 26]

Chaddha teaches the method wherein each of said dimensions is orthogonal, that is, information from one dimension is not contained in another dimension (Col 5 Lines 23-30).

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaddha and Burt as applied to claim 25 in view of US Patent 6,477,201 to Wine et al.

[claim 28]

Chaddha and Burt teach the apparatus of claims 25. Chaddha further teaches the adjusting of the frame rate with the spatial resolution to find the best possible combination for a particular bandwidth (Col 11 Lines 54-64). Chaddha does not teach dividing the video into the dimensions comprising image regions or color depth. Wine teaches the use of adjusting the parameters that define the resolution and color depth for a specific image region based on that region's importance (Col 1 Lines 56-67, Col 2 Lines 4-10, Col 3 Lines 53-67, Col 4 Lines 1-17). It would have been obvious to one skilled in the art at the time of the invention to combine the additional parameters of

Wine to the system of Chaddha in order to provide the ability to adjust the image quality of image regions based on the region's importance.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 5,557,684 to Wang et al.

US Patent 6,084,912 to Reitmeier et al.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick Rekstad whose telephone number is 703-305-5543. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 703-305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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